Theoretical Aspects of Hadron Spectroscopy and Phenomenology

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## Exotic hadrons in $\Lambda b \to J/\Psi \boxtimes \Lambda$ decay

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We study the weak decay of the  $\Lambda_b$  baryon into  $J/\psi \phi \Lambda$  and the possibility of formation of exotic hadrons via final state interaction in all three final two-body channels.

In the  $J/\psi \phi$  invariant mass spectrum we study the interplay between the X(4140) and the X(4160) resonances. Particularly for the X(4160) resonance we use a theoretical model which dynamically generates it in chiral unitarity approach [Molina, Oset, PRD80, 114013 (2009)].

The  $J/\psi \Lambda$  mass spectrum may help to identify the strange (S = -1) partner of the hidden-charm pentaquark recently observed by the LHCb collaboration, the existence of which has been predicted by a chiral unitary approach. We conclude that this strange pentaquark has a good chance of experimental detection if it is present in the range between 4450 - 4500 MeV.

In the  $\phi \Lambda$  spectrum there is a contribution from a dynamically generated resonance at around 2160 MeV [Oset, Ramos, EPJA44, 445 (2010)], but with the present model parameters we see a rather little chance for its experimental detection.

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